Enter after-final amended claims JMW 2/2/06

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A permanent-magnet rotating machine comprising:

a rotor having a rotor core carrying, on a curved outer surface, a plurality of permanent magnets, wherein

the permanent magnets are arranged in first and second circumferential rows that are arranged along an axial direction of the rotor,

closest pairs of the permanent magnets in each of the first and second rows are separated from each other by respective gaps, and

the permanent magnets in the first row are skewed from the permanent magnets in the second row, in a circumferential direction, by a row-to-row skew angle θe, expressed in terms of electrical angle; and

a stator having a tubular stator core in which the rotor is disposed, the stator core including stator coils for producing a rotating magnetic field which causes the rotor to rotate, wherein

a lower limit of the row-to-row skew angle θe is larger than a theoretical angle θs, expressed in terms of electrical angle by ((180 times the number of rotor poles)/(the smallest number of which the number of stator poles and the number of rotor poles are factors)/(number of permanent magnet rows along the axial direction)),

a cogging torque ratio, which is the ratio of cogging torque occurring without skew to the cogging torque occurring when the permanent magnets are skewed, at the theoretical angle θs, calculated based on a relationship between the cogging torque ratio and the row-to-row skew angle θe, and magnetizing force of the stator core as a function of flux density, ~~and~~

an upper limit of the row-to-row skew angle θe is no larger than a maximum value of the row-to-row skew angle θe at which the cogging torque ratio does not exceed the calculated cogging torque ratio at the theoretical angle θs, and